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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION 10

IN THE MATTER OF:

HARBOR ISLAND SUPERFUND SITE EAST WATERWAY OPERABLE UNIT

Seattle, Washington,

Port of Seattle,

Respondent.

ADMINISTRATIVE SETTLEMENT AGREEMENT AND ORDER ON CONSENT FOR SUPPLEMENTAL REMEDIAL INVESTIGATION/ FEASIBILITY STUDY

CERCLA Docket No. 10-2007-0030

Proceeding Under Sections 104, 107 and 122 of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended, 42 U.S.C. §§ 9604, 9607 and 9622.



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ADMINISTRATIVE SETTLEMENT AGREEMENT AND ORDER ON CONSENT FOR SUPPLEMENTAL REMEDIAL INVESTIGATION/FEASIBILITY STUDY

'I. JURISDICTION AND GENERAL PROVISIONS

- 1. This Administrative Settlement Agreement and Order on Consent (Settlement Agreement) is entered into voluntarily by the United States Environmental Protection Agency (EPA) and the Port of Seattle (Port), (Respondent). The Settlement Agreement concerns the preparation and performance of a supplemental remedial investigation and feasibility study (SRI/FS) for the East Waterway operable unit of the Harbor Island Superfund Site (EWW OU or Site) and the reimbursement for future response costs incurred by EPA in connection with the SRI/FS.
- 2. This Settlement Agreement is issued under the authority vested in the President of the United States by Sections 104, 107 and 122 of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended, 42 U.S.C. §§ 9604, 9607 and 9622 (CERCLA). This authority was delegated to the Administrator of EPA on January 23, 1987, by Executive Order 12580, 52 Fed. Reg. 2926, and further delegated to Regional Administrators on May 11, 1994, by EPA Delegation Nos. 14-14-C and 14-14-D, and redelegated within Region 10 to the Unit Managers within the Office of Environmental Cleanup.
- 3. In accordance with Sections 104(b)(2) and 122(j)(1) of CERCLA, 42 U.S.C. §§ 9604(b)(2) and 9622(j)(1), EPA notified the designated CERCLA Natural Resource Trustees (NRTs) on February 23, 2006, of negotiations with potentially responsible parties regarding the release of hazardous substances that may have resulted in injury to the natural resources within their jurisdiction.

4. EPA and Respondent recognize that this Settlement Agreement has been negotiated in good faith and that the actions undertaken by Respondent in accordance with this Settlement Agreement do not constitute an admission of any liability. Respondent does not admit, and retains the right to controvert in any subsequent proceedings other than proceedings to implement or enforce this Settlement Agreement, the validity of the findings of fact, conclusions of law and determinations in Sections V and VI of this Settlement Agreement. Respondent agrees to comply with and be bound by the terms of this Settlement Agreement and further agrees that it will not contest the basis or validity of this Settlement Agreement or its terms.

II. PARTIES BOUND

- 5. This Settlement Agreement applies to and is binding upon EPA and upon Respondent and its successors and assigns. Any change in ownership or organizational status of Respondent including, but not limited to, any transfer of assets or real or personal property shall not alter such Respondent's responsibilities under this Settlement Agreement.
- 6. Respondent shall ensure that its contractors, subcontractors and representatives receive a copy of this Settlement Agreement and comply with this Settlement Agreement.
- 7. Respondent shall be responsible for any noncompliance with this Settlement Agreement.
- 8. The undersigned representative of Respondent certifies that he or she is fully authorized to enter into the terms and conditions of this Settlement Agreement and to execute and legally bind Respondent to this Settlement Agreement.

III. STATEMENT OF PURPOSE

9. In entering into this Settlement Agreement, the objectives of EPA and Respondent

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welfare, or the environment caused by the release or threatened release of hazardous substances, pollutants or contaminants at or from the Site, by conducting a Supplemental Remedial Investigation as more specifically set forth in the Statement of Work (SOW) attached as Appendix A to this Settlement Agreement; (b) to identify and evaluate remedial alternatives to prevent, mitigate or otherwise respond to or remedy any release or threatened release of hazardous substances, pollutants, or contaminants at or from the Site, by conducting a Feasibility Study as more specifically set forth in the SOW in Appendix A to this Settlement Agreement; and (c) to recover response and oversight costs incurred by EPA with respect to this Settlement Agreement.

10. The Work conducted under this Settlement Agreement is subject to approval by EPA and shall provide all appropriate and necessary information to assess Site conditions and evaluate alternatives to the extent necessary to select a remedy that will be consistent with CERCLA and the National Oil and Hazardous Substances Pollution Contingency Plan, 40 C.F.R. Part 300 (NCP). Respondent shall conduct all Work under this Settlement Agreement in compliance with CERCLA, the NCP, and all applicable EPA guidances, policies, and procedures.

IV. DEFINITIONS

11. Unless otherwise expressly provided herein, terms used in this Settlement Agreement that are defined in CERCLA or in regulations promulgated under CERCLA shall have the meaning assigned to them in CERCLA or in such regulations. Whenever terms listed below are used in this Settlement Agreement or in the appendices attached hereto and incorporated hereunder, the following definitions shall apply:

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- a. "CERCLA" shall mean the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. §§ 9601, et seq.
- b. "Day" shall mean a calendar day. In computing any period of time under this Settlement Agreement, where the last day would fall on a Saturday, Sunday, or federal holiday, the period shall run until the close of business of the next working day.
- c. "Effective Date" shall be the effective date of this Settlement Agreement as provided in Section XXIX.
- d. "EPA" shall mean the United States Environmental Protection Agency and any successor departments or agencies of the United States.
- e. "Engineering Controls" shall mean constructed containment barriers or systems that control one or more of the following: downward migration, infiltration or seepage of surface runoff or rain; or natural leaching migration of contaminants through the subsurface over time.

 Examples include caps, engineered bottom barriers, immobilization processes, and vertical barriers.
- f. "Future Response Costs" shall mean all costs, including, but not limited to, direct and indirect costs, that the United States incurs in reviewing or developing plans, reports and other items pursuant to this Settlement Agreement, verifying the Work, or otherwise implementing, overseeing, or enforcing this Settlement Agreement, including but not limited to, payroll costs, contractor costs, travel costs, laboratory costs, Agency for Toxic Substances and Disease Registry (ATSDR) costs, the costs incurred pursuant to Paragraph 54 (costs and attorneys fees and any monies paid to secure access, including the amount of just compensation), Paragraph 40 (emergency response) and Paragraph 84 (Work takeover). Future Response Costs

shall also include all Interim Response Costs, the costs, if any of redoing any documents, submissions or other Work required by this Settlement Agreement, or performing the Baseline Risk Assessment, and costs in preparing the Proposed Plan, Record of Decision and response to comments.

- g. "Institutional controls" shall mean non-engineered instruments, such as administrative and/or legal controls, that help to minimize the potential for human exposure to contamination and/or protect the integrity of a remedy by limiting land and/or resource use. Examples of institutional controls include easements and covenants, special building permit requirements, and well drilling prohibitions.
- h. "Interest" shall mean interest at the rate specified for interest on investments of the EPA Hazardous Substance Superfund established by 26 U.S.C. § 9507, compounded annually, in accordance with 42 U.S.C. § 9607(a). The applicable rate of interest shall be the rate in effect at the time the interest accrues. The rate of interest is subject to change on October 1 of each year.
- i. "Interim Response Costs" shall mean all costs, including direct and indirect costs, (a) paid by the United States in connection with the Site between April 5, 2005 and the Effective Date, or (b) incurred on or after April 5, 2005, but paid after that date.
- j. "Municipal solid waste" shall mean waste material: (i) generated by a household (including a single or multifamily residence); or (ii) generated by a commercial, industrial or institutional entity, to the extent that the waste material (I) is essentially the same as waste normally generated by a household; (II) is collected and disposed of with other municipal solid waste as part of normal municipal solid waste collection services; and (III)

contains a relative quantity of hazardous substances no greater than the relative quantity of hazardous substances contained in waste material generated by a typical single-family household.

- k. "NCP" shall mean the National Oil and Hazardous Substances Pollution

 Contingency Plan promulgated pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, codified at 40 C.F.R. Part 300, and any amendments thereto.
- "Paragraph" shall mean a portion of this Settlement Agreement identified by an Arabic numeral. References to paragraphs in the SOW will be so identified (for example, "SOW paragraph 15.
 - m. "Parties" shall mean EPA and Respondent.
- n. "RCRA" shall mean the Resource Conservation and Recovery Act, also known as the Solid Waste Disposal Act, as amended, 42 U.S.C. §§ 6901, et seq.
 - o. "Respondent" shall mean the Port of Seattle (Port).
- p. "Section" shall mean a portion of this Settlement Agreement identified by a Roman numeral. References to sections in the SOW will be so identified; for example as "SOW Section V.
- q. "Settlement Agreement" shall mean this Administrative Settlement
 Agreement and Order on Consent, the SOW, all appendices attached hereto (listed in Section
 XXVII) and all documents incorporated by reference into this document including without
 limitation EPA-approved submissions. EPA-approved submissions (other than progress reports)
 are incorporated into and become a part of the Settlement Agreement upon approval by EPA. In
 the event of conflict between this Settlement Agreement and any appendix or other incorporated
 documents, this Settlement Agreement shall control.

- r. "Site" shall mean the EWW OU of the Harbor Island Superfund Site, as depicted on the map attached as Appendix B.
 - s. "State" shall mean the State Washington.
- t. "Statement of Work" or "SOW" shall mean the Statement of Work for development of a SRI/FS for the Site, as set forth in Appendix A to this Settlement Agreement.

 The Statement of Work is incorporated into this Settlement Agreement and is an enforceable part of this Settlement Agreement as are any modifications made thereto in accordance with this Settlement Agreement.
- u. "Waste Material" shall mean (1) any "hazardous substance" under Section 101(14) of CERCLA, 42 U.S.C. § 9601(14); (2) any pollutant or contaminant under Section 101(33) of CERCLA, 42 U.S.C. § 9601(33); and (3) any "solid waste" under Section 1004(27) of RCRA, 42 U.S.C. § 6903(27).
- v. "Work" shall mean all activities Respondent is required to perform under this Settlement Agreement, except those required by Section XIV (Retention of Records).

V. FINDINGS OF FACT

- 12. The Harbor Island Superfund Site encompasses a man-made industrial island of over 400 acres within the City of Seattle, and associated sediments surrounding the island within Elliott Bay at the mouth of the Lower Duwamish Waterway. Harbor Island was created with, among other materials, dredged material from a widening and straightening of the Lower Duwamish River by the United States Army Corps of Engineers, completed in 1911.
- 13. The EWW OU consists of contaminated sediments off the eastern shore of Harbor Island, and associated sources to the extent necessary to control those sources.

- 14. The EWW OU is one of seven Harbor Island Superfund Site OUs. Remedial Action has been selected for all of the other Harbor Island OUs, and is in varying stages of implementation.
- 15. Major activities on Harbor Island have included: port and rail transport, petroleum product storage and transfer, secondary lead smelting, shipbuilding, repair and maintenance, lead and other metals fabrication, plating, reclamation and recycling, and stormwater collection and discharge. Stormwater discharge, metals fabrication and recycling operations and port and rail transport have most significantly impacted the EWW OU due to the immediate proximity and reasonable fate and transport assumptions based on those activities.
- 16. Contaminants of concern in the EWW OU include, but are not limited to, polychlorinated biphenyls (PCBs), poly-aromatic hydrocarbons (PAHs), mercury, other metals and organic compounds.
- 17. Associated sediments are habitat to numerous fish and other aquatic species, and are within a migratory corridor for endangered, threatened, and other anadromous fish.
- 18. Pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, EPA placed the Site on the National Priorities List, set forth at 40 C.F.R. Part 300, Appendix B, by publication in the Federal Register on September 8, 1983, 48 Fed. Reg. 40658.
- 19. The Port of Seattle is a Washington Port District, duly created under RCW Chap. 53. The Port has owned and operated facilities along the eastern shore of Harbor Island, and has operated in the EWW OU.
- 20. An island-wide (except for the Lockheed Shipyard Upland and Petroleum Tank Farm OUs) RI/FS including sediments was conducted by EPA in the late 1980s-early 1990s.

Supplemental sediment data was collected pursuant to subsequent EPA consent Orders with various parties who have performed remedial action at other Harbor Island OUs. The Port recently performed a removal of known contaminated sediments in the EWW OU pursuant to Administrative Order on Consent, EPA Docket No. CERCLA-10-2003-0166, issued on September 9, 2003.

VI. CONCLUSIONS OF LAW AND DETERMINATIONS

Based on the Findings of Fact set forth above, EPA has determined that:

- The EWW OU is a "facility" as defined in Section 101(9) of CERCLA, 42
 U.S.C. § 9601(9).
- 22. The contamination found at the Site, as identified in the Findings of Fact above, includes hazardous substances as defined in Section 101(14) of CERCLA, 42 U.S.C. § 9601(14).
- 23. The conditions described in the Findings of Fact above constitute an actual and/or threatened "release" of a hazardous substance from the facility as defined in Section 101(22) of CERCLA, 42 U.S.C. § 9601(22).
- 24. Respondent is a "person" as defined in Section 101(21) of CERCLA, 42 U.S.C. § 9601(21).
- 25. Respondent is a responsible party under Sections 104, 107 and 122 of CERCLA, 42 U.S.C. §§ 9604, 9607 and 9622.
- 26. The actions required by this Settlement Agreement are necessary to protect the public health, welfare or the environment, are in the public interest, 42 U.S.C. § 9622(a), are consistent with CERCLA and the NCP, 42 U.S.C. §§ 9604(a)(1), 9622(a), and will expedite

effective remedial action and minimize litigation, 42 U.S.C. § 9622(a).

27. EPA has determined that Respondent is qualified to conduct the RI/FS within the meaning of Section 104(a) of CERCLA, 42 U.S.C. § 9604(a), and will carry out the Work properly and promptly, in accordance with Sections 104(a) and 122(a) of CERCLA, 42 U.S.C. §§ 9604(a) and 9622(a), if Respondent complies with the terms of this Settlement Agreement.

VII. SETTLEMENT AGREEMENT AND ORDER

28. Based upon the foregoing Findings of Fact and Conclusions of Law and Determinations, it is hereby Settled, Ordered and Agreed that Respondent shall comply with all provisions of this Settlement Agreement, including, but not limited to, all appendices to this Settlement Agreement and all documents incorporated by reference into this Settlement Agreement.

VIII. DESIGNATION OF CONTRACTORS AND PROJECT COORDINATORS

29. Selection of Contractors, Personnel. All Work performed under this
Settlement Agreement shall be under the direction and supervision of qualified personnel.
Within 30 days of the Effective Date of this Settlement Agreement, and before the Work outlined below begins, Respondent shall notify EPA in writing of the names, titles, and qualifications of the personnel, including contractors, subcontractors, consultants and laboratories to be used in carrying out such Work. With respect to any proposed contractor, Respondent shall demonstrate that the proposed contractor has a quality system which complies with ANSI/ASQC E4-1994, "Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs," (American National Standard, January 5, 1995, or most recent version), by submitting a copy of the proposed contractor's Quality Management Plan

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("OMP"). The OMP should be prepared in accordance with "EPA Requirements for Quality Management Plans (OA/R-2)," (EPA/240/B-01/002, March 2001 or subsequently issued guidance) or equivalent documentation as determined by EPA. The qualifications of the persons undertaking the Work for Respondent shall be subject to EPA's review, for verification that such persons meet minimum technical background and experience requirements. This Settlement Agreement is contingent on Respondent's demonstration to EPA's satisfaction that Respondent is qualified to perform properly and promptly the actions set forth in this Settlement Agreement. If EPA disapproves in writing of any person's technical qualifications, Respondent shall notify EPA of the identity and qualifications of the replacements within 30 days of the written notice. If EPA subsequently disapproves of the replacement, EPA reserves the right to terminate this Settlement Agreement and to conduct a complete SRI/FS, and to seek reimbursement for costs and penalties from Respondent. During the course of the SRI/FS, Respondent shall notify EPA in writing of any changes or additions in the personnel used to carry out such Work, providing their names, titles, and qualifications. EPA shall have the same right to disapprove changes and additions to personnel as it has hereunder regarding the initial notification.

30. Within 10 days after the Effective Date, Respondent shall designate a Project Coordinator who shall be responsible for administration of all actions by Respondent required by this Settlement Agreement and shall submit to EPA the designated Project Coordinator's name, address, telephone number, and qualifications. To the greatest extent possible, the Project Coordinator shall be present on Site or readily available during Site Work. EPA retains the right to disapprove of the designated Project Coordinator. If EPA disapproves of the designated Project Coordinator, Respondent shall retain a different Project Coordinator and shall notify EPA

of that person's name, address, telephone number and qualifications within 30 days following EPA's disapproval. Respondent shall have the right to change its Project Coordinator, subject to EPA's right to disapprove. Respondent shall notify EPA 10 days before such a change is made. The initial notification may be made orally, but shall be promptly followed by a written notification. Receipt by Respondent's Project Coordinator of any notice or communication from EPA relating to this Settlement Agreement shall constitute receipt by Respondent.

- 31. EPA has designated Ravi Sanga of the Office of Environmental Cleanup (ECL) as its Project Coordinator. EPA will notify Respondent of a change of its designated Project Coordinator. Except as otherwise provided in this Settlement Agreement, Respondent shall direct all submissions required by this Settlement Agreement to the Project Coordinator at 1200 Sixth Avenue, Seattle WA 98101, M/S ECL-111. The SOW may specify alternative electronic submission instructions for specified submissions.
- 32. EPA's Project Coordinator shall have the authority lawfully vested in a Remedial Project Manager (RPM) and On-Scene Coordinator (OSC) by the NCP. In addition, EPA's Project Coordinator shall have the authority consistent with the NCP, to halt any Work required by this Settlement Agreement, and to take any necessary response action when s/he determines that conditions at the Site may present an immediate endangerment to public health or welfare or the environment. The absence of the EPA Project Coordinator from the area under study pursuant to this Settlement Agreement shall not be cause for the stoppage or delay of Work.
- 33. EPA shall arrange for a qualified person to assist in its oversight and review of the conduct of the SRI/FS, as required by Section 104(a) of CERCLA, 42 U.S.C. Section

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9604(a). Such person shall have the authority to observe Work and make inquiries in the absence of EPA, but not to modify the SRI/FS Work Plan.

IX. WORK TO BE PERFORMED

34. Respondent shall conduct the SRI/FS in accordance with the provisions of this Settlement Agreement, the SOW, CERCLA, the NCP and EPA guidance, including, but not limited to the "Interim Final Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA" (OSWER Directive # 9355.3-01, October 1988 or subsequently issued guidance), "Guidance for Data Useability in Risk Assessment" (OSWER Directive #9285.7-05, October 1990 or subsequently issued guidance), and guidance referenced therein, and guidances referenced in the SOW, as may be amended or modified by EPA. The Remedial Investigation ("RI") shall consist of collecting data to characterize site conditions, determining the nature and extent of the contamination at or from the Site, assessing risk to human health and the environment and conducting treatability testing as necessary to evaluate the potential performance and cost of the treatment technologies that are being considered. The Feasibility Study ("FS") shall determine and evaluate (based on treatability testing, where appropriate) alternatives for remedial action to prevent, mitigate or otherwise respond to or remedy the release or threatened release of hazardous substances, pollutants, or contaminants at or from the Site. The alternatives evaluated must include, but shall not be limited to, the range of alternatives described in the NCP, and shall include remedial actions that utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. In evaluating the alternatives, Respondent shall address the factors required to be taken into account by Section 121 of CERCLA, 42 U.S.C. § 9621, and Section 300.430(e) of the

NCP, 40 C.F.R. § 300.430(e). Upon-request by EPA, Respondent shall submit in electronic form all portions of any plan, report or other deliverable Respondent is required to submit pursuant to provisions of this Settlement Agreement.

35. Upon receipt of the draft FS report, EPA will evaluate, as necessary, the estimates of the risk to the public and environment that are expected to remain after a particular remedial alternative has been completed and will evaluate the durability, reliability and effectiveness of any proposed Institutional Controls.

36. Modification of the RI/FS Work Plan.

- a. If at any time during the SRI/FS process, Respondent identifies a need for additional data, Respondent shall submit a memorandum documenting the need for additional data to the EPA Project Coordinator within 30 days of identification. EPA in its discretion will determine whether the additional data will be collected by Respondent and whether it will be incorporated into plans, reports and other deliverables.
- b. In the event of unanticipated or changed circumstances at the Site,
 Respondent shall notify the EPA Project Coordinator by telephone within 24 hours of discovery
 of the unanticipated or changed circumstances. In the event that EPA determines that the
 immediate threat or the unanticipated or changed circumstances warrant changes in the RI/FS
 Work Plan, EPA shall modify or amend the RI/FS Work Plan in writing accordingly.
 Respondent shall perform the RI/FS Work Plan as modified or amended.
- c. EPA may determine that in addition to tasks defined in the initially approved RI/FS Work Plan, other additional Work may be necessary to accomplish the objectives of the SRI/FS. Respondent agrees to perform these response actions in addition to

those required by the initially approved RI/FS Work Plan, including any approved modifications, if EPA determines that such actions are necessary for a complete SRI/FS.

- d. Respondent shall confirm its willingness to perform the additional Work in writing to EPA within 7 days of receipt of the EPA request. If Respondent objects to any modification determined by EPA to be necessary pursuant to this Paragraph, Respondent may seek dispute resolution pursuant to Section XV (Dispute Resolution). The SOW and/or RI/FS Work Plan shall be modified in accordance with the final resolution of the dispute.
- e. Respondent shall complete the additional Work according to the standards, specifications, and schedule set forth or approved by EPA in a written modification to the RI/FS Work Plan or written RI/FS Work Plan supplement. EPA reserves the right to conduct the Work itself at any point, to seek reimbursement from Respondent, and/or to seek any other appropriate relief.
- f. Nothing in this Paragraph shall be construed to limit EPA's authority to require performance of further response actions at the Site.
- 37. Off-Site Shipment of Waste Material. Respondent shall, prior to any off-site shipment of Waste Material from the Site to an out-of-state waste management facility, provide written notification of such shipment of Waste Material to the appropriate state environmental official in the receiving facility's state and to EPA's Designated Project Coordinator. However, this notification requirement shall not apply to any off-site shipments when the total volume of all such shipments will not exceed 10 cubic yards.
- a. Respondent shall include in the written notification the following information: (1) the name and location of the facility to which the Waste Material is to be

shipped: (2) the type and quantity of the Waste Material to be shipped; (3) the expected schedule for the shipment of the Waste Material; and (4) the method of transportation. Respondent shall notify the state in which the planned receiving facility is located of major changes in the shipment plan, such as a decision to ship the Waste Material to another facility within the same state, or to a facility in another state.

- b. The identity of the receiving facility and state will be determined by Respondent following the award of the contract for the remedial investigation and feasibility study. Respondent shall provide the information required by Subparagraph 37.a and 37.c as soon as practicable after the award of the contract and before the Waste Material is actually shipped.
- c. Before shipping any hazardous substances, pollutants, or contaminants from the Site to an off-site location, Respondent shall obtain EPA's certification that the proposed receiving facility is operating in compliance with the requirements of CERCLA Section 121(d)(3), 42 U.S.C. § 9621(d)(3), and 40 C.F.R. § 300.440. Respondent shall only send hazardous substances, pollutants or contaminants from the Site to an off-site facility that complies with the requirements of the statutory provision and regulation cited in the preceding sentence.
- 38. Meetings. Respondent shall make presentations at, and participate in, meetings at the request of EPA during the initiation, conduct, and completion of the SRI/FS. In addition to discussion of the technical aspects of the SRI/FS, topics will include anticipated problems or new issues. Meetings will be scheduled at EPA's discretion.
- 39. <u>Progress Reports</u>. In addition to the plans, reports and other deliverables set forth in this Settlement Agreement, Respondent shall provide to EPA monthly progress reports

by the 15th day of the following month. At a minimum, with respect to the preceding month, these progress reports shall (1) describe the actions which have been taken to comply with this Settlement Agreement during that month, (2) include all results of sampling and tests and all other data received by Respondent, (3) describe Work planned for the next two months with schedules relating such Work to the overall project schedule for RI/FS completion, and (4) describe all problems encountered and any anticipated problems, any actual or anticipated delays, and solutions developed and implemented to address any actual or anticipated problems or delays.

40. Emergency Response and Notification of Releases.

a. In the event of any action or occurrence during performance of the Work which causes or threatens a release of Waste Material from the Site that constitutes an emergency situation or may present an immediate threat to public health or welfare or the environment, Respondent shall immediately take all appropriate action. Respondent shall take these actions in accordance with all applicable provisions of this Settlement Agreement, including, but not limited to, the Health and Safety Plan, in Order to prevent, abate or minimize such release or endangerment caused or threatened by the release. Respondent shall also immediately notify the EPA Project Coordinator or, in the event of his/her unavailability, the Regional Duty Officer at 206-553-1263, and the EPA Regional Emergency 24-hour telephone number, (800) 424-8802, of the incident or Site conditions. In the event that Respondent fails to take appropriate response action as required by this Paragraph, and EPA takes such action instead, Respondent shall reimburse EPA all costs of the response action not inconsistent with the NCP pursuant to Section XVIII (Payment of Response Costs).

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U.S.C. § 11004, et seq.

X. EPA APPROVAL OF PLANS AND OTHER SUBMISSIONS

addition to, and not in lieu of, reporting under Section 103(c) of CERCLA, 42 U.S.C. § 9603(c),

and Section 304 of the Emergency Planning and Community Right-To-Know Act of 1986, 42

written report to EPA within 7 days after each release, setting forth the events that occurred and

b. In addition, in the event of any release of a hazardous substance from the Site,

41. After review of any plan, report or other item that is required to be submitted for approval pursuant to this Settlement Agreement, in a notice to Respondent EPA shall: (a) approve the submission in whole or in part; (b) approve the submission upon specified conditions; (c) modify the submission to cure the deficiencies; (d) disapprove the submission in whole or in part, directing that Respondent modify the submission; or (e) any combination of the above. However, EPA shall not modify a submission without first providing Respondent at least one notice of deficiency and an opportunity to cure within 30 days or such other reasonable time as EPA may determine, except where to do so would cause serious disruption to the Work or where previous submission(s) have been disapproved due to material defects.

42. In the event of approval, approval upon conditions, or modification by EPA, pursuant to Subparagraph 41(a), (b), (c) or (e), Respondent shall proceed to take any action required by the plan, report or other deliverable, as approved or modified by EPA subject only to

its right to invoke the Dispute Resolution procedures set forth in Section XV (Dispute Resolution) with respect to the modifications or conditions made by EPA. Following EPA approval or modification of a submission or portion thereof, Respondent shall not thereafter alter or amend such submission or portion thereof unless directed by EPA. In the event that EPA modifies the submission to cure the deficiencies pursuant to Subparagraph 41(c) and the submission had a material defect, EPA retains the right to seek stipulated penalties, as provided in Section XVI (Stipulated Penalties).

43. Resubmission.

- a. Upon receipt of a notice of disapproval, Respondent shall, within the time specified by EPA in such notice, correct the deficiencies and resubmit the plan, report, or other deliverable for approval. Any stipulated penalties applicable to the submission, as provided in Section XVI, shall accrue during the specified period but shall not be payable unless the resubmission is disapproved or modified due to a material defect as provided in Paragraphs 44 and 45.
- b. Notwithstanding the receipt of a notice of disapproval, Respondent shall proceed to take any action required by any non-deficient portion of the submission, unless otherwise directed by EPA. Implementation of any non-deficient portion of a submission shall not relieve Respondent of any liability for stipulated penalties under Section XVI (Stipulated Penalties).
- c. Respondent shall not proceed further with any subsequent activities or tasks until receiving EPA approval, approval on condition or modification of the following deliverables: RI/FS Work Plan and Sampling and Analysis Plan, Draft Remedial Investigation

Report and Treatability Testing Work Plan and Sampling and Analysis Plan, Draft Quality Assurance Project Plan and Draft Feasibility Study Report. While awaiting EPA approval, approval on condition or modification of these deliverables, Respondent shall proceed with all other tasks and activities which may be conducted independently of these deliverables, in accordance with the schedule set forth under this Settlement Agreement.

- d. For all remaining deliverables not listed above in subparagraph 43.c.,
 Respondent shall proceed with all subsequent tasks, activities and deliverables without awaiting
 EPA approval on the submitted deliverable. EPA reserves the right to stop Respondent from
 proceeding further, either temporarily or permanently, on any task, activity or deliverable at any
 point during the SRI/FS.
- 44. If EPA disapproves a resubmitted plan, report or other deliverable, or portion thereof, EPA may again direct Respondent to correct the deficiencies. EPA shall also retain the right to modify or develop the plan, report or other deliverable. Respondent shall implement any such plan, report, or deliverable as corrected, modified or developed by EPA, subject only to Respondent's right to invoke the procedures set forth in Section XV (Dispute Resolution).
- 45. If upon resubmission, a plan, report, or other deliverable is disapproved or modified by EPA due to a material defect, Respondent shall be deemed to have failed to submit such plan, report, or other deliverable timely and adequately unless Respondent invokes the dispute resolution procedures in accordance with Section XV (Dispute Resolution) and EPA's action is revoked or substantially modified pursuant to a Dispute Resolution decision issued by EPA or superceded by an agreement reached pursuant to that Section. The provisions of Section XV (Dispute Resolution) and Section XVI (Stipulated Penalties) shall govern the implementation

of the Work and accrual and payment of any stipulated penalties during Dispute Resolution. If EPA's disapproval or modification is not otherwise revoked, substantially modified or superceded as a result of a decision or agreement reached pursuant to the Dispute Resolution process set forth in Section XV, stipulated penalties shall accrue for such violation from the date on which the initial submission was originally required, as provided in Section XVI.

- 46. In the event that EPA takes over some of the tasks, but not the preparation of the RI Report or the FS Report, Respondent shall incorporate and integrate information supplied by EPA into the final reports.
- 47. All plans, reports, and other deliverables submitted to EPA under this Settlement Agreement shall, upon approval or modification by EPA, be incorporated into and enforceable under this Settlement Agreement. In the event EPA approves or modifies a portion of a plan, report, or other deliverable submitted to EPA under this Settlement Agreement, the approved or modified portion shall be incorporated into and enforceable under this Settlement Agreement.
- 48. Neither failure of EPA to expressly approve or disapprove of Respondent's submissions within a specified time period, nor the absence of comments, shall be construed as approval by EPA. Whether or not EPA gives express approval for Respondent's deliverables, Respondent is responsible for preparing deliverables acceptable to EPA.

XI. QUALITY ASSURANCE, SAMPLING, AND ACCESS TO INFORMATION

49. Quality Assurance. Respondent shall assure that Work performed, samples taken and analyses conducted conform to the requirements of the SOW, the QAPP and guidances identified therein. Respondent will assure that field personnel used by Respondent are properly

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trained in the use of field equipment and in chain of custody procedures. Respondent shall only use laboratories which have a documented quality system that complies with "EPA Requirements for Quality Management Plans (QA/R-2)" (EPA/240/B-01/002, March 2001) or equivalent documentation as determined by EPA.

50. Sampling.

- a. All results of sampling, tests, modeling or other data (including raw data) generated by Respondent, or on Respondent's behalf, during the period that this Settlement Agreement is effective, shall be submitted to EPA in the next monthly progress report as described in Paragraph 39 of this Settlement Agreement. EPA will make available to Respondent validated data generated by EPA unless it is exempt from disclosure by any federal or state law or regulation.
- b. Respondent shall verbally notify EPA at least 14 days prior to conducting significant field events as described in the SOW, RI/FS Work Plan or Sampling and Analysis Plan. At EPA's verbal or written request, or the request of EPA's oversight assistant, Respondent shall allow split or duplicate samples to be taken by EPA (and its authorized representatives) of any samples collected in implementing this Settlement Agreement. All split samples of Respondent shall be analyzed by the methods identified in the QAPP.

51. Access to Information.

a. Respondent shall provide to EPA upon request, copies of all documents and information within their possession or control or that of their contractors or agents relating to activities at the Site or to the implementation of this Settlement Agreement, including, but not limited to, sampling, analysis, chain of custody records, manifests, trucking logs, receipts,

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reports, sample traffic routing, correspondence, or other documents or information related to the Work. Respondent shall also make available to EPA, for purposes of investigation, information gathering or testimony, its employees, agents, or representatives with knowledge of relevant facts concerning the performance of the Work.

- b. Respondent may assert business confidentiality claims covering part or all of the documents or information submitted to EPA under this Settlement Agreement to the extent permitted by and in accordance with Section 104(e)(7) of CERCLA, 42 U.S.C. § 9604(e)(7), and 40 C.F.R. § 2.203(b). Documents or information determined to be confidential by EPA will be afforded the protection specified in 40 C.F.R. Part 2, Subpart B. If no claim of confidentiality accompanies documents or information when it is submitted to EPA, or if EPA has notified Respondent that the documents or information are not confidential under the standards of Section 104(e)(7) of CERCLA or 40 C.F.R. Part 2, Subpart B, the public may be given access to such documents or information without further notice to Respondent. Respondent shall segregate and clearly identify all documents or information submitted under this Settlement Agreement for which Respondent asserts business confidentiality claims.
- c. Respondent may assert that certain documents, records and other information are privileged under the attorney-client privilege or any other privilege recognized by federal law. If Respondent asserts such a privilege in lieu of providing documents, it shall provide EPA with the following: 1) the title of the document, record, or information; 2) the date of the document, record, or information; 3) the name and title of the author of the document, record, or information; 4) the name and title of each addressee and recipient; 5) a description of the contents of the document, record, or information; and 6) the privilege asserted by

Respondent. However, no documents, reports or other information created or generated pursuant to the requirements of this Settlement Agreement shall be withheld on the grounds that they are privileged.

- d. No claim of confidentiality shall be made with respect to any data, including, but not limited to, all sampling, analytical, monitoring, hydrogeologic, scientific, chemical, or engineering data, or any other documents or information evidencing conditions at or around the Site.
- 52. In entering into this Settlement Agreement, Respondent waives any objections to any data gathered, generated, or evaluated by EPA, the State or Respondent in the performance or oversight of the Work that has been verified according to the quality assurance/quality control (QA/QC) procedures required by the Settlement Agreement or any EPA-approved RI/FS Work Plans or Sampling and Analysis Plans. If Respondent objects to any other data relating to the RI/FS, Respondent shall submit a report to EPA that specifically identifies and explains its objections, describes the acceptable uses of the data, if any, and identifies any limitations to the use of the data. The report must be submitted to EPA within 15 days of the monthly progress report containing the data.

XII. SITE ACCESS

53. If the Site, or any other property where access is needed to implement this Settlement Agreement, is owned or controlled by Respondent, Respondent shall, commencing on the Effective Date, provide EPA and its representatives, including contractors, with access at all reasonable times to the Site, or such other property, for the purpose of conducting any activity related to this Settlement Agreement.

54. Where any action under this Settlement Agreement is to be performed in areas owned by or in possession of someone other than Respondent, Respondent shall use its best efforts to obtain all necessary access agreements within 30 days after the need for such access has been identified, or as otherwise specified in writing by the EPA Project Coordinator. Respondent shall immediately notify EPA if after using its best efforts it is unable to obtain such agreements. For purposes of this Paragraph, "best efforts" includes the payment of reasonable sums of money in consideration of access. Respondent shall describe in writing its efforts to obtain access. If Respondent cannot obtain access agreements, EPA may either (i) obtain access for Respondent or assist Respondent in gaining access, to the extent necessary to effectuate the response actions described herein, using such means as EPA deems appropriate; (ii) perform those tasks or activities with EPA contractors; or (iii) terminate the Settlement Agreement. Respondent shall reimburse EPA for all costs and attorney's fees incurred by the United States in obtaining such access, in accordance with the procedures in Section XVIII (Payment of Response Costs). If EPA performs those tasks or activities with EPA contractors and does not terminate the Settlement Agreement, Respondent shall perform all other tasks or activities not requiring access to that property, and shall reimburse EPA for all costs incurred in performing such tasks or activities. Respondent shall integrate the results of any such tasks or activities undertaken by EPA into its plans, reports and other deliverables.

55. Notwithstanding any provision of this Settlement Agreement, EPA retains all of its access authorities and rights, including enforcement authorities related thereto, under CERCLA, RCRA, and any other applicable statutes or regulations.

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XIII. COMPLIANCE WITH OTHER LAWS

56. Respondent shall comply with all applicable local, state and federal laws and regulations when performing the RI/FS. No local, state, or federal permit shall be required for any portion of any action conducted entirely on-site, including studies, if the action is selected and carried out in compliance with Section 121 of CERCLA, 42 U.S.C. § 9621. Where any portion of the Work is to be conducted off-site and requires a federal or state permit or approval, Respondent shall submit timely and complete applications and take all other actions necessary to obtain and to comply with all such permits or approvals. This Settlement Agreement is not, and shall not be construed to be, a permit issued pursuant to any federal or state statute or regulation.

XIV. RETENTION OF RECORDS

57. During the pendency of this Settlement Agreement and for a minimum of 10 years after commencement of construction of any remedial action, Respondent shall preserve and retain all non-identical copies of documents, records and other information (including documents, records or other information in electronic form) now in its possession or control or which come into its possession or control that relate in any manner to the performance of the Work or the liability of any person under CERCLA with respect to the Site, regardless of any internal retention policy to the contrary. Until 10 years after commencement of construction of any remedial action, Respondent shall also instruct its contractors and agents to preserve all documents, records, and other information of whatever kind, nature or description relating to performance of the Work.

58. At the conclusion of this document retention period, Respondent shall notify EPA at least 90 days prior to the destruction of any such documents, records or other

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information, and, upon request by EPA, Respondent shall deliver any such documents, records, or other information to EPA. Respondent may assert that certain documents, records, and other information are privileged under the attorney-client privilege or any other privilege recognized by federal law. If Respondent asserts such a privilege, it shall provide EPA with the following: 1) the title of the document, record, or other information; 2) the date of the document, record, or other information; 3) the name and title of the author of the document, record, or other information; 4) the name and title of each addressee and recipient; 5) a description of the subject of the document, record, or other information; and 6) the privilege asserted by Respondent. However, no documents, records or other information created or generated pursuant to the requirements of this Settlement Agreement shall be withheld on the grounds that they are privileged.

59. Respondent hereby certifies that to the best of its knowledge and belief, after thorough inquiry, it has not altered, mutilated, discarded, destroyed or otherwise disposed of any records, documents or other information (other than identical copies) relating to its potential liability regarding the Site since notification of potential liability by EPA or the filing of suit against it regarding the Site and that it has fully complied with any and all EPA requests for information pursuant to Sections 104(e) and 122(e) of CERCLA, 42 U.S.C. §§ 9604(e) and 9622(e), and Section 3007 of RCRA, 42 U.S.C. § 6927.

XV. DISPUTE RESOLUTION

60. Unless otherwise expressly provided for in this Settlement Agreement, the dispute resolution procedures of this Section shall be the exclusive mechanism for resolving disputes arising under this Settlement Agreement. The Parties shall attempt to resolve any

Agreement, including billings for Future Response Costs, Respondent shall notify EPA in writing of its objection(s) within 14 days of such action, unless the objection(s) has/have been resolved informally. EPA and Respondent shall have 14 days from EPA's receipt of Respondent's written objection(s) to resolve the dispute (the "Negotiation Period"). The Negotiation Period may be extended at the sole discretion of EPA. Such extension may be granted verbally but must be confirmed in writing.

62. Any agreement reached by the Parties pursuant to this Section shall be in writing and shall, upon signature by the Parties, be incorporated into and become an enforceable part of this Settlement Agreement. If the Parties are unable to reach an agreement within the Negotiation Period, the Director of the Office of Environmental Cleanup or his/her Associate Director will issue a written decision. EPA's decision shall be incorporated into and become an enforceable part of this Settlement Agreement. Respondent's obligations under this Settlement Agreement shall not be tolled by submission of any objection for dispute resolution under this Section. Following resolution of the dispute, as provided by this Section, Respondent shall fulfill the requirement that was the subject of the dispute in accordance with the agreement reached or with EPA's decision, whichever occurs, and regardless of whether Respondent agrees with the decision.

XVI. STIPULATED PENALTIES

63. Respondent shall be liable to EPA for stipulated penalties in the amounts set forth in Paragraphs 64 and 65 for failure to comply with any of the requirements of this

Settlement Agreement specified below unless excused under Section XVII (Force Majeure).
"Compliance" by Respondent shall include completion of the Work under this Settlement

Agreement or any activities contemplated under any RI/FS Work Plan or other plan approved

under this Settlement Agreement identified below, in accordance with all applicable
requirements of law, this Settlement Agreement, the SOW, and any plans or other documents
approved by EPA pursuant to this Settlement Agreement and within the specified time schedules
established by and approved under this Settlement Agreement.

64. Stipulated Penalty Amounts - Work.

a. The following stipulated penalties shall accrue per day for any noncompliance identified in Subparagraph 64(b):

Penalty Per Violation Per Day	Period of Noncompliance
\$ 1,000	1st through 7th day
\$ 2,000	8th through 14th day
\$ 3,500	15 th through 30 th day
\$ 7,500	31st through 90th day

b. Compliance Milestones

1. Failure to timely submit any of the following major deliverables: draft and any revised or final version of the following deliverables or submissions:

RI/FS Work Plan; Baseline Human Health or Ecological Risk Assessment;

Quality Assurance Project Plan; Remedial Action Objectives Memorandum;

Sediment Transport Report or Memorandum; RI or FS Report, or Final RI/FS Report.

2. Failure to timely initiate EPA-approved field work

65. Stipulated Penalty Amounts - Reports.

a. The following stipulated penalties shall accrue per violation per day for failure to timely submit any other reports or written documents, including progress reports, or to timely pay Future Response Costs pursuant to this Settlement Agreement:

Penalty Per Violation Per Day	Period of Noncompliance	
\$ 500	1st through 14th day	
\$ 1,500	15 th through 30 th day	
\$ 5,000	31st through 90th day	

- 66. All penalties shall begin to accrue on the day after the complete performance is due or the day a violation occurs, and shall continue to accrue through the final day of the correction of the noncompliance or completion of the activity.
- 67. Stipulated penalties shall not accrue: (1) with respect to a deficient submission under Section X (EPA Approval of Plans and Other Submissions), during the period, if any, beginning on the 31st day after EPA's receipt of such submission until the date that EPA notifies Respondent of any deficiency; and (2) with respect to a Dispute Resolution decision as set forth in Paragraph 62 of Section XV (Dispute Resolution), during the period, if any, beginning on the 21st day after the Negotiation Period begins until the date that the final decision is issued regarding such dispute. Nothing herein shall prevent the simultaneous accrual of separate penalties for separate violations of this Settlement Agreement.
- 68. Following EPA's determination that Respondent has failed to comply with a requirement of this Settlement Agreement, EPA may give Respondent written notification of the

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same and describe the noncompliance. EPA may send Respondent a written demand for the payment of the penalties. However, penalties shall accrue as provided in the preceding Paragraph regardless of whether EPA has notified Respondent of a violation.

- within 30 days after Respondent's receipt from EPA of a demand for payment of the penalties, unless Respondent invokes the dispute resolution procedures in accordance with Section XV (Dispute Resolution). All payments to EPA under this Section shall be paid by certified or cashier's check(s) made payable to "EPA Hazardous Substances Superfund," shall be mailed to Mellon Bank, EPA-Region 10 Superfund, P.O. Box 371099M, Pittsburgh, PA 15251, shall indicate that the payment is for stipulated penalties, and shall reference the EPA Region and Site/Spill ID Number 10DG, the EPA Docket Number, and the name and address of the party(ies) making payment. Copies of check(s) paid pursuant to this Section, and any accompanying transmittal letter(s) shall be sent to EPA as provided in Paragraph 31, and to the EPA Project Coordinator at the address set forth in Paragraph 31 of this Settlement Agreement, and the Financial Management Officer, EPA Region 10, 1200 Sixth Avenue, M/S OMP-146, Seattle, WA 98101-1128.
- 70. The payment of penalties shall not alter in any way Respondent's obligation to complete performance of the Work required under this Settlement Agreement.
- 71. Penalties shall continue to accrue as provided in Paragraph 67 during any dispute resolution period, but need not be paid until 15 days after the dispute is resolved by agreement or by receipt of EPA's decision.
 - 72. If Respondent fails to pay stipulated penalties when due, EPA may institute

proceedings to collect the penalties, as well as Interest. Respondent shall pay Interest on the unpaid balance, which shall begin to accrue on the date of demand made pursuant to Paragraph 69.

altering, or in any way limiting the ability of EPA to seek any other remedies or sanctions available by virtue of Respondent's violation of this Settlement Agreement or of the statutes and regulations upon which it is based, including, but not limited to, penalties pursuant to Section 122(l) of CERCLA, 42 U.S.C. § 9622(l), and punitive damages pursuant to Section 107(c)(3) of CERCLA, 42 U.S.C. § 9607(c)(3). Provided, however, that EPA shall not seek civil penalties pursuant to Section 122(l) of CERCLA or punitive damages pursuant to Section 107(c)(3) of CERCLA for any violation for which a stipulated penalty is provided herein, except in the case of willful violation of this Settlement Agreement or in the event that EPA assumes performance of a portion or all of the Work pursuant to Section XX (Reservation of Rights by EPA), Paragraph 84. Notwithstanding any other provision of this Section, EPA may, in its non-reviewable discretion, waive any portion of stipulated penalties that have accrued pursuant to this Settlement Agreement.

XVII. FORCE MAJEURE

74. Respondent agrees to perform all requirements of this Settlement Agreement within the time limits established under this Settlement Agreement, unless the performance is delayed by a *force majeure*. For purposes of this Settlement Agreement, *force majeure* is defined as any event arising from causes beyond the control of Respondent or of any entity controlled by Respondent, including but not limited to its contractors and subcontractors, which delays or

prevents performance of any obligation under this Settlement Agreement despite Respondent's best efforts to fulfill the obligation. *Force majeure* does not include financial inability to complete the Work or increased cost of performance.

obligation under this Settlement Agreement, whether or not caused by a *force majeure* event, Respondent shall notify EPA orally within 24 hours of when Respondent first knew that the event might cause a delay. Within 7 days thereafter, Respondent shall provide to EPA in writing an explanation and description of the reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken to prevent or minimize the delay; a schedule for implementation of any measures to be taken to prevent or mitigate the delay or the effect of the delay; Respondent's rationale for attributing such delay to a *force majeure* event if it intend to assert such a claim; and a statement as to whether, in the opinion of Respondent, such event may cause or contribute to an endangerment to public health, welfare or the environment. Failure to comply with the above requirements shall preclude Respondent from asserting any claim of *force majeure* for that event for the period of time of such failure to comply and for any additional delay caused by such failure.

76. If EPA agrees that the delay or anticipated delay is attributable to a force majeure event, the time for performance of the obligations under this Settlement Agreement that are affected by the force majeure event will be extended by EPA for such time as is necessary to complete those obligations. An extension of the time for performance of the obligations affected by the force majeure event shall not, of itself, extend the time for performance of any other obligation. If EPA does not agree that the delay or anticipated delay has been or will be caused

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by a force majeure event, EPA will notify Respondent in writing of its decision. If EPA agrees that the delay is attributable to a force majeure event, EPA will notify Respondent in writing of the length of the extension, if any, for performance of the obligations affected by the force majeure event.

XVIII. PAYMENT OF RESPONSE COSTS

77. Payments of Future Response Costs.

- a. Respondent shall pay EPA all Future Response Costs not inconsistent with the NCP. On a periodic basis, EPA will send Respondent a bill requiring payment that includes a SCORPIOS or other regionally prepared cost summary which includes direct and indirect costs incurred by EPA and its contractors. Respondent shall make all payments within 30 days of receipt of each bill requiring payment, except as otherwise provided in this Section of this Settlement Agreement. Respondent shall make all payments required by this Paragraph by a certified or cashier's check or checks made payable to "EPA Hazardous Substance Superfund," referencing the name and address of the party(ies) making payment and EPA Site/Spill ID number 10DG. Respondent shall send the check(s) to: EPA Hazardous Substances Superfund, Mellon Bank, EPA Region 10 Superfund, P.O. Box 371099M, Pittsburgh, PA 15251.
- b. At the time of payment, Respondent shall send notice that payment has been made to the EPA Project Coordinator.
- c. The total amount to be paid by Respondent pursuant to Subparagraph 78.a. shall be deposited in the Harbor Island East Waterway Special Account within the EPA Hazardous Substance Superfund to be retained and used to conduct or finance response actions at or in connection with the Site, or to be transferred by EPA to the EPA Hazardous Substance

Superfund.

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78. If Respondent does not pay Future Response Costs within 30 days of Respondent's receipt of a bill, Respondent shall pay Interest on the unpaid balance of Future Response Costs. The Interest on unpaid Future Response Costs shall begin to accrue on the date of receipt of the bill and shall continue to accrue until the date of payment. If EPA receives a partial payment, Interest shall accrue on any unpaid balance.

- 79. Payments of Interest made under this Section shall be in addition to such other remedies or sanctions available to the United States by virtue of Respondent's failure to make timely payments under this Section, including but not limited to, payments of stipulated penalties pursuant to Section XVI. Respondent shall make all payments required by this Section in the manner described in this Section.
- Paragraph 77 if it determines that EPA has made an accounting error or if it believes EPA incurred excess costs as a direct result of an EPA action that was inconsistent with the NCP. Such objection shall be made in writing within 30 days of receipt of the bill and must be sent to the EPA Project Coordinator. Any such objection shall specifically identify the contested Future Response Costs and the basis for objection. In the event of an objection, Respondent shall within the 30 day period pay all uncontested Future Response Costs to EPA in the manner described in Paragraph 77. Simultaneously, Respondent shall establish an interest-bearing escrow account in a federally-insured bank duly chartered in the State of Washington and remit to that escrow account funds equivalent to the amount of the contested Future Response Costs. Respondent shall send to the EPA Project Coordinator a copy of the transmittal letter and check paying the

uncontested Future Response Costs, and a copy of the correspondence that establishes and funds the escrow account, including, but not limited to, information containing the identity of the bank and bank account under which the escrow account is established as well as a bank statement showing the initial balance of the escrow account. Simultaneously with establishment of the escrow account, Respondent shall initiate the Dispute Resolution procedures in Section XV (Dispute Resolution). If EPA prevails in the dispute, within 5 days of the resolution of the dispute, Respondent shall pay the sums due (with accrued interest) to EPA in the manner described in Paragraph 77. If Respondent prevails concerning any aspect of the contested costs, Respondent shall pay that portion of the costs (plus associated accrued interest) for which they did not prevail to EPA in the manner described in Paragraph 77. Respondent shall be disbursed any balance of the escrow account. The dispute resolution procedures set forth in this Paragraph in conjunction with the procedures set forth in Section XV (Dispute Resolution) shall be the exclusive mechanisms for resolving disputes regarding Respondent's obligation to reimburse EPA for its Future Response Costs.

XIX. COVENANT NOT TO SUE BY EPA

81. In consideration of the actions that will be performed and the payments that will be made by Respondent under the terms of this Settlement Agreement, and except as otherwise specifically provided in this Settlement Agreement, EPA covenants not to sue or to take administrative action against Respondent pursuant to Sections 106 and 107(a) of CERCLA, 42 U.S.C. §§ 9606 and 9607(a), for the Work and Future Response Costs. This covenant not to sue shall take effect upon the Effective Date and is conditioned upon the complete and satisfactory performance by Respondent of all obligations under this Settlement Agreement,

including, but not limited to, payment of Future Response Costs pursuant to Section XVIII. This covenant not to sue extends only to Respondent and does not extend to any other person.

XX. RESERVATIONS OF RIGHTS BY EPA

- 82. Except as specifically provided in this Settlement Agreement, nothing herein shall limit the power and authority of EPA or the United States to take, direct, or order all actions necessary to protect public health, welfare, or the environment or to prevent, abate, or minimize an actual or threatened release of hazardous substances, pollutants or contaminants, or hazardous or solid waste on, at, or from the Site. Further, nothing herein shall prevent EPA from seeking legal or equitable relief to enforce the terms of this Settlement Agreement, from taking other legal or equitable action as it deems appropriate and necessary, or from requiring Respondent in the future to perform additional activities pursuant to CERCLA or any other applicable law.
- 83. The covenant not to sue set forth in Section XIX above does not pertain to any matters other than those expressly identified therein. EPA reserves, and this Settlement Agreement is without prejudice to, all rights against Respondent with respect to all other matters, including, but not limited to:
- a. claims based on a failure by Respondent to meet a requirement of this Settlement Agreement;
 - b. liability for costs not included within the definition Future Response Costs;
 - c. liability for performance of response action other than the Work;
 - d. criminal liability;
- e. liability for damages for injury to, destruction of, or loss of natural resources, and for the costs of any natural resource damage assessments;

- f. liability arising from the past, present, or future disposal, release or threat of release of Waste Materials outside of the Site; and
- g. liability for costs incurred or to be incurred by the Agency for Toxic Substances and Disease Registry related to the Site.
- implementation of any portion of the Work, is seriously or repeatedly deficient or late in its performance of the Work, or is implementing the Work in a manner which may cause an endangerment to human health or the environment, EPA may assume the performance of all or any portion of the Work as EPA determines necessary. Respondent may invoke the procedures set forth in Section XV (Dispute Resolution) to dispute EPA's determination that takeover of the Work is warranted under this Paragraph. Costs incurred by EPA in performing the Work pursuant to this Paragraph shall be considered Future Response Costs that Respondent shall pay pursuant to Section XVIII (Payment of Response Costs). Notwithstanding any other provision of this Settlement Agreement, EPA retains all authority and reserves all rights to take any and all response actions authorized by law.

XXI. COVENANT NOT TO SUE BY RESPONDENT

- 85. Respondent covenants not to sue and agrees not to assert any claims or causes of action against the United States, or its contractors or employees, with respect to the Work, Future Response Costs, or this Settlement Agreement, including, but not limited to:
- a. any direct or indirect claim for reimbursement from the Hazardous Substance Superfund established by 26 U.S.C. § 9507, based on Sections 106(b)(2), 107, 111, 112, or 113 of CERCLA, 42 U.S.C. §§ 9606(b)(2), 9607, 9611, 9612, or 9613, or any other

provision of law;

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b. any claim arising out of the Work or arising out of the response actions for which the Future Response Costs have or will be incurred, including any claim under the United States Constitution, the Washington State Constitution, the Tucker Act, 28 U.S.C. § 1491, the Equal Access to Justice Act, 28 U.S.C. § 2412, as amended, or at common law; or

c. any claim against the United States pursuant to Sections 107 and 113 of CERCLA, 42 U.S.C. §§ 9607 and 9613, relating to the Work or payment of Future Response Costs.

86. These covenants not to sue shall not apply in the event the United States brings a cause of action or issues an Order pursuant to the reservations set forth in Paragraphs 83 (b), (c), and (e) - (g), but only to the extent that Respondent's claims arise from the same response action, response costs, or damages that the United States is seeking pursuant to the

87. Nothing in this Agreement shall be deemed to constitute approval or preauthorization of a claim within the meaning of Section 111 of CERCLA, 42 U.S.C. § 9611, or 40 C.F.R. § 300.700(d).

XXII. OTHER CLAIMS

88. By issuance of this Settlement Agreement, the United States and EPA assume no liability for injuries or damages to persons or property resulting from any acts or omissions of Respondent.

89. Except as expressly provided in Section XXI, (Covenant Not to Sue by Respondent), and Section XIX (Covenant Not to Sue by EPA), nothing in this Settlement

Agreement constitutes a satisfaction of or release from any claim or cause of action against Respondent or any person not a party to this Settlement Agreement, for any liability such person may have under CERCLA, other statutes, or common law, including but not limited to any claims of the United States for costs, damages and interest under Sections 106 and 107 of CERCLA, 42 U.S.C. §§ 9606 and 9607.

90. No action or decision by EPA pursuant to this Settlement Agreement shall give rise to any right to judicial review except as set forth in Section 113(h) of CERCLA, 42 U.S.C. § 9613(h).

XXIII. CONTRIBUTION PROTECTION AND RIGHTS

- 91. a. The Parties agree that this Settlement Agreement constitutes an administrative settlement for purposes of Section 113(f)(2) of CERCLA, 42 U.S.C. §§ 9613(f)(2), and that Respondent is entitled, as of the Effective Date, to protection from contribution actions or claims as provided by Sections 113(f)(2) and 122(h)(4) of CERCLA, 42 U.S.C. §§ 9613(f)(2) and 9622(h)(4), for "matters addressed" in this Settlement Agreement. The "matters addressed" in this Settlement Agreement are the Work and Future Response Costs.
- b. The Parties agree that this Settlement Agreement constitutes an administrative settlement for purposes of Section 113(f)(3)(B) of CERCLA, 42 U.S.C. § 9613(f)(3)(B), pursuant to which Respondent has resolved its liability to the United States for the Work and Future Response Costs.

XXIV. INDEMNIFICATION

92. Respondent shall indemnify, save and hold harmless the United States, its officials, agents, contractors, subcontractors, employees and representatives from any and all

claims or causes of action arising from, or on account of negligent or other wrongful acts or omissions of Respondent, its officers, directors, employees, agents, contractors, or subcontractors, in carrying out actions pursuant to this Settlement Agreement. In addition, Respondent agrees to pay the United States all costs incurred by the United States, including but not limited to attorneys fees and other expenses of litigation and settlement, arising from or on account of claims made against the United States based on negligent or other wrongful acts or omissions of Respondent, its officers, directors, employees, agents, contractors, subcontractors and any persons acting on its behalf or under its control, in carrying out activities pursuant to this Settlement Agreement. The United States shall not be held out as a party to any contract entered into by or on behalf of Respondent in carrying out activities pursuant to this Settlement Agreement. Neither Respondent nor any such contractor shall be considered an agent of the United States.

- 93. The United States shall give Respondent notice of any claim for which the United States plans to seek indemnification pursuant to this Section and shall consult with Respondent prior to settling such claim.
- 94. Respondent waives all claims against the United States for damages or reimbursement or for set-off of any payments made or to be made to the United States, arising from or on account of any contract, agreement, or arrangement between Respondent and any person for performance of Work on or relating to the Site. In addition, Respondent shall indemnify and hold harmless the United States with respect to any and all claims for damages or reimbursement arising from or on account of any contract, agreement, or arrangement between Respondent and any person for performance of Work on or relating to the Site.

XXV. INSURANCE

95. At least 30 days prior to commencing any on-Site Work under this Settlement Agreement, Respondent shall secure, and shall maintain for the duration of this Settlement Agreement, comprehensive general liability insurance and automobile insurance with limits of \$5 million, combined single limit, naming EPA as an additional insured. Within the same period, Respondent shall provide EPA with certificates of such insurance and a copy of each insurance policy. Respondent shall submit such certificates and copies of policies each year on the anniversary of the Effective Date. In addition, for the duration of the Settlement Agreement, Respondent shall satisfy, or shall ensure that their contractors or subcontractors satisfy, all applicable laws and regulations regarding the provision of worker's compensation insurance for all persons performing the Work on behalf of Respondent in furtherance of this Settlement Agreement. If Respondent demonstrates by evidence satisfactory to EPA that any contractor or subcontractor maintains insurance equivalent to that described above, or insurance covering some or all of the same risks but in an equal or lesser amount, Respondent need provide only that portion of the insurance described above which is not maintained by such contractor or subcontractor.

XXVI. FINANCIAL ASSURANCE

96. Within 30 days of the Effective Date, Respondent shall establish and maintain financial security for the benefit of EPA in the amount of \$5 million in one or more of the following forms, in order to secure the full and final completion of the Work by Respondent:

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a. a surety bond unconditionally guaranteeing payment and/or performance of

the Work;

b. one or more irrevocable letters of credit, payable to or at the direction of EPA, issued by financial institution(s) acceptable in all respects to EPA equaling the total estimated cost of the Work;

- c. a trust fund administered by a trustee acceptable in all respects to EPA;
- d. a policy of insurance issued by an insurance carrier acceptable in all respects to EPA, which ensures the payment and/or performance of the Work;
- e. a corporate guarantee to perform the Work provided by one or more parent corporations or subsidiaries of Respondent, or by one or more unrelated corporations that has a substantial business relationship with Respondent; including a demonstration that any such company satisfies the financial test requirements of 40 C.F.R. Part 264.143(f); and/or
- f. a corporate guarantee to perform the Work by Respondent, including a demonstration that Respondent satisfies the requirements of 40 C.F.R. Part 264.143(f).
- 97. Any and all financial assurance instruments provided pursuant to this Section shall be in form and substance satisfactory to EPA, determined in EPA's sole discretion. In the event that EPA determines at any time that the financial assurances provided pursuant to this Section (including, without limitation, the instrument(s) evidencing such assurances) are inadequate, Respondent shall, within 30 days of receipt of notice of EPA's determination, obtain and present to EPA for approval one of the other forms of financial assurance listed in Paragraph 96, above. In addition, if at any time EPA notifies Respondent that the anticipated cost of completing the Work has increased, then, within 30 days of such notification, Respondent shall obtain and present to EPA for approval a revised form of financial assurance (otherwise

acceptable under this Section) that reflects such cost increase. Respondent's inability to demonstrate financial ability to complete the Work shall in no way excuse performance of any activities required under this Settlement Agreement.

98. If Respondent seeks to ensure completion of the Work through a guarantee pursuant to Subparagraph 96.e. or 96.f. of this Settlement Agreement, Respondent shall (i) demonstrate to EPA's satisfaction that the guarantor satisfies the requirements of 40 C.F.R. Part 264.143(f); and (ii) resubmit sworn statements conveying the information required by 40 C.F.R. Part 264.143(f) annually, on the anniversary of the Effective Date, to EPA. For the purposes of this Settlement Agreement, wherever 40 C.F.R. Part 264.143(f) references "sum of current closure and post-closure costs estimates and the current plugging and abandonment costs estimates," the current cost estimate of \$5 million for the Work at the Site shall be used in relevant financial test calculations.

99. If, after the Effective Date, Respondent can show that the estimated cost to complete the remaining Work has diminished below the amount set forth in Paragraph 96 of this Section, Respondent may, on any anniversary date of the Effective Date, or at any other time agreed to by the Parties, reduce the amount of the financial security provided under this Section to the estimated cost of the remaining Work to be performed. Respondent shall submit a proposal for such reduction to EPA, in accordance with the requirements of this Section, and may reduce the amount of the security after receiving written approval from EPA. In the event of a dispute, Respondent may seek dispute resolution pursuant to Section XV (Dispute Resolution). Respondent may reduce the amount of security in accordance with EPA's written decision resolving the dispute.

100. Respondent may change the form of financial assurance provided under this Section at any time, upon notice to and prior written approval by EPA, provided that EPA determines that the new form of assurance meets the requirements of this Section. In the event of a dispute, Respondent may change the form of the financial assurance only in accordance with the written decision resolving the dispute.

XXVII. INTEGRATION/APPENDICES

101. This Settlement Agreement and its appendices, and any deliverables, technical memoranda, specifications, schedules, documents, plans, reports (other than progress reports), etc. that will be developed pursuant to this Settlement Agreement and become incorporated into and enforceable under this Settlement Agreement constitute the final, complete and exclusive agreement and understanding among the Parties with respect to the settlement embodied in this Settlement Agreement. The Parties acknowledge that there are no representations, agreements or understandings relating to the settlement other than those expressly contained in this Settlement Agreement. The following appendices are attached to and incorporated into this Settlement Agreement:

"Appendix A" is the SOW.

"Appendix B is the map of the Site.

XXVIII. ADMINISTRATIVE RECORD

102. EPA will determine the contents of the administrative record file for selection of the remedial action. Respondent shall submit documents to EPA developed during the course of the SRI/FS upon which selection of the response action may be based. Upon request by EPA, Respondent shall provide copies of plans, task memoranda for further action,

quality assurance memoranda and audits, raw data, field notes, laboratory analytical reports and other reports. Upon request by EPA, Respondent shall additionally submit any previous studies conducted under state, local or other federal authorities relating to selection of the response action, and all communications between Respondent and state, local or other federal authorities concerning selection of the response action. At EPA's discretion, Respondent shall establish a community information repository at or near the Site, to house one copy of the administrative record.

XXIX. EFFECTIVE DATE AND SUBSEQUENT MODIFICATION

103. This Settlement Agreement shall be effective upon issuance by EPA

104. This Settlement Agreement may be amended by mutual agreement of EPA and Respondent. Amendments shall be in writing and shall be effective when signed by EPA. EPA Project Coordinators do not have the authority to sign amendments to the Settlement Agreement.

105. No informal advice, guidance, suggestion, or comment by the EPA Project Coordinator or other EPA representatives regarding reports, plans, specifications, schedules, or any other writing submitted by Respondent shall relieve Respondent of its obligation to obtain any formal approval required by this Settlement Agreement, or to comply with all requirements of this Settlement Agreement, unless it is formally modified.

XXX. NOTICE OF COMPLETION OF WORK

106. When EPA determines that all Work has been fully performed in accordance with this Settlement Agreement, with the exception of any continuing obligations required by this Settlement Agreement, EPA will provide written notice to Respondent. If EPA determines

that any such Work has not been completed in accordance with this Settlement Agreement, EPA will notify Respondent, provide a list of the deficiencies, and require that Respondent modify the RI/FS Work Plan if appropriate to correct such deficiencies, in accordance with Paragraph 36 (Modification of the Work Plan). Failure by Respondent to implement the approved modified RI/FS Work Plan shall be a violation of this Settlement Agreement.

It is so SETTLED, ORDERED AND AGREED this 2014 day of October, 2006.

Chaile Feleman

Office of Environmental Cleanup
Unit Manager, U.S. EPA Region 10

Agreed this day of 00, 2006. For Respondent Port of Seattle By: Jan Hismas for MRD Title: Chief Financial Officer

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	that any such Work has not been completed in accordance with this Settlement Agreement, EPA
1	will notify Respondent, provide a list of the deficiencies, and require that Respondent modify the
2	RI/FS Work Plan (appropriate to correct such deficiencies, in accordance with Paragraph 36
3	
4	(Modification of the Work Plan). Failure by Respondent to implement the approved modified
5	RI/FS Work Plan shall be a violation of this Settlement Agreement.
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7	It is so SETTLED, ORDERED AND AGREED this day of, 2006.
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11	BY: DATE:
12	Office of Environmental Cleanup Unit Manager, U.S. EPA Region 10
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APPENDIX A

STATEMENT OF WORK

THE EAST WATERWAY OPERABLE UNIT HARBOR ISLAND SUPERFUND SITE SEATTLE, WASHINGTON

I. PURPOSE

The purpose of this Statement of Work (SOW) is to fully implement the Administrative Settlement Agreement and Order on Consent (ASAOC) for the Supplemental Remedial Investigation (RI) and Feasibility Study (FS) of the East Waterway (EWW) Operable Unit (OU) of the Harbor Island Superfund Site.

The Work to be completed under this SOW shall include preparation, delivery of and implementation of:

- 1. Project Work Plan and Schedule
- 2. Existing Information Summary Report
- 3. Conceptual Site Model and Data Gaps Analysis Report
- 4. Preliminary Alternatives Screening and Remedial Action Objectives
- 5. Draft and Final Quality Assurance Project Plans (QAPPs)
- 6. Draft and Final Data Reports
- 7. Draft and Final Risk Assessment Technical Memoranda
- 8. Draft and Final Baseline Ecological Risk Assessment
- 9. Draft and Final Baseline Human Health Risk Assessment
- 10. Draft and Final Remedial Investigation (RI) Report
- 11. Remedial Action Objectives Memorandum
- 12. Draft and Final Remedial Alternatives Screening Memorandum
- 13. Draft and Final Feasibility Study
- 14. Community Involvement Activities

Remedial activities shall be completed in accordance with a proposed schedule as submitted by the Respondents as part of Task 1 of this SOW. With all draft documents, Respondents will prepare final documents that satisfactorily address EPA's comments. The goal of this SOW is to complete a supplemental remedial investigation on EWW, which would ultimately result in a Record of Decision on the entire EWW OU in 2009.

II. WORK TO BE PERFORMED BY RESPONDENTS

Respondents shall complete the following tasks:

Task 1 - Project Work Plan and Schedule

The Respondents will prepare and submit a draft and final work plan that will clearly document the extent of work that will be completed during the RI/FS. The work plan will include overall site management goals, an overview of each RI/FS activity and a detailed project schedule that will cover all tasks presented in this SOW (with time expressed in terms of work days). The draft work plan shall be submitted within 60 days after issuance of the Settlement Agreement. The final work plan shall be submitted within 30 days after Respondents receipt of EPA's comments on the draft work plan unless a longer time is specified or agreed to in writing by EPA.

Task 2 - Existing Information Summary Report

Respondents shall prepare a report that summarizes existing information. The data presented in this report will include that data and information collected during previous remedial investigations and dredging projects in the EWW OU as well as the pre- and post-contingency dredging data which most accurately describes the pre-sand placement surface from the Phase 1 Removal Action.

The Summary of Existing Information Report shall include, at a minimum, the following elements:

- I. Introduction/Purpose
- II. Brief description of the current physical, ecological, and human-use characteristics of the EWW OU.
- III. Identification of property owners of the EWW OU and owners and operators of the uplands.
- IV. A complete description of what is known about the nature and extent of contamination in all EWW environmental media (surface water, sediment, tissue), including a summary of existing surface and subsurface sediment data with a comparison to Washington State Sediment Management Standards (Sediment Quality Standards and Cleanup Screening Levels) or Puget Sound Dredge Disposal Criteria, when state Sediment Management Standards do not exist for particular chemical constituents (e.g., TBT). This comparison will include all the pre- and post-contingency dredge monitoring data that characterize the sediment surface prior to placement of the sand layer for the Phase 1 Removal Action. The information summarized also should include all existing information from environmental investigations or cleanups along the EWW (e.g., U.S. Coast Guard Slip along Pier 36).
- V. Identification of all known historical and ongoing sources of contamination to the EWW, including discussions of completed or ongoing source control activities to the extent this information is available.

- VI. Summary of transport of sediments within and adjacent to the EWW. The adequacy and applicability of this existing information will be evaluated to help establish the need for additional sediment transport process information that may be required to support the remedial investigation, risk assessments, remedial alternatives screening and feasibility study. The need for additional studies to address site-specific issues such as resuspension and transport of sediment by vessel-generated propeller wash will also be evaluated and in context with any required sediment stability studies.
- VII. Summary of tissue data taken from EWW (and immediately adjacent locations within the Lower Duwamish River and Elliott Bay).
- VIII. Review of the quality of all available sediment, water, and tissue data (including data age and relevance to current conditions, analytical methods used, detection limit adequacy and other data limitations and/or strengths) to support the following: (1) an understanding of the nature and extent of contamination, (2) source identification, (3) general discussions of contaminant fate and transport, (4) ecological and human health risk, and (5) remedial measures within the EWW. The review will include a discussion, with supporting rationale, of media data that are deemed adequate to support RI, risk assessment and FS activities and those data that are not.
- IX. Review of existing data on sediment stability (including stability of sediment from tidal, river currents, bioturbation and vessel effects) within the East Waterway
- X Other information (including GIS maps and figures) as necessary to gain a complete understanding of the EWW OU. Data management protocols, including geospatial analysis techniques, will be included as an appendix to the existing data summary. All data should be provided to EPA in a Microsoft Office Access database. For each figure, all shapefiles and layers used to create that figure should be identified and submitted to EPA.

Task 3 - Conceptual Site Model and Data Gaps Analysis Report

The Conceptual Site model and Data Gaps Analysis Report shall include, at a minimum, the following elements:

- I. Introduction/Purpose
- II. A preliminary conceptual site model of EWW reflecting all likely current and future exposure scenarios (i.e., including pathways with and without existing supporting data).
- III. Identification (and initial prioritization) of data gaps for the RI, risk assessment and FS. This analysis will include an assessment, related to a preliminary Conceptual Site Model (CSM), of data gaps identified from the review of all historic and current EWW data. The data gaps assessment will include a summary of recommended studies (and supporting justification) that is keyed to important CSM elements (i.e., as reviewed and discussed in Task 2) and FS needs: contaminant source(s), contaminant fate and transport, and receptor (human, ecological) exposure (i.e., contaminant concentrations, other exposure parameters). Data gaps may involve field investigation or modeling,

subject to EPA approval. Where existing bioassay, sediment, water and/or tissue data are determined in the data gaps analysis to be of sufficient quantity and quality, and representative of current conditions, they may be proposed for use in lieu of collecting additional data (as approved by EPA). All evaluations of the usability of existing data will be in accordance with EPA's guidance for data usability in risk assessment (Part A, B) (Publication No. 9285.7-09A, B).

IV. Sediment stability and transport data gaps will also be identified both to support the RI, risk assessment and FS. If determined to be necessary, based on the existing information and data gaps analysis (Tasks 2 and 3), the Respondents will conduct a Sediment Transport Study for the EWW OU. This study will provide new, site-specific information describing sediment transport processes within the EWW OU. This information will be useful in supporting risk assessments, remedial design, and alternative screening. Bathymetry data collection in the EWW may not be required if the Respondents can demonstrate the adequacy (age, representativeness) of existing data in the Sediment Transport Study QAPP. If this study is implemented, the Respondents will submit a draft and final sediment transport data report to EPA for approval. Fate of sediment chemicals will not be the subject of any field studies, but rather, addressed in the draft EWW RI report through literature analysis of chemical fate in a manner similar to that of the LDW Phase 1 RI.

Task 4 - Preliminary Alternatives Screening and Remedial Action Objectives

The purpose of conducting a Preliminary Alternatives Screening and Remedial Action Objectives is to identify potential remedial action alternatives that are likely not feasible, in order to streamline both the SRI and FS process and to help focus required remedial investigation work elements. Based on the site conceptual model, site management goals and existing data, a preliminary screening of remedial alternatives will be conducted and summarized in a memorandum. The data needs for all of the preliminary remedial alternatives will be considered in the analysis of data gaps. This Preliminary screening of alternatives will include the development of Preliminary Remedial Action Objectives (RAOs) that will be based on the existing site information. The preliminary RAOs will specify contaminants and media of interest, exposure pathways, and preliminary remediation goals that permit a range of treatment and containment options to be developed. These preliminary RAOs will be re-evaluated in Task 11, as additional site characterization data and information from the baseline risk assessment become available.

Task 5 - Draft and Final Quality Assurance Project Plans (QAPP)

Based on the existing data summary and data gaps analyses presented in the Tasks 2 and 3 reports, the Respondents will develop Quality Assurance Project Plans (QAPPs) that will address the collection and analysis of all additional data in the EWW OU, including surface water, surface and subsurface sediment, pore water (if determined necessary in the data gaps analysis), sediment stability and transport (if determined necessary in the data gaps analysis), and fish/invertebrate tissue. Sediment and fish/invertebrate analyses should be consistent with chemicals analyzed with the Lower Duwamish project. The sediment QAPP should also include a plan to conduct toxicity testing on a subset of the samples. Surface water analysis should focus

on those chemicals of concern likely to be present in the water column. Tissue samples will include all sediment chemicals of concern that have a potential to bioaccumulate in shellfish and fish tissue. A human use survey may also be required, and the scope of the survey would be identified as part of the data gaps analysis (Task 3).

Sample collection and analysis procedures will be described in all QAPPs, to ensure that these activities are conducted in accordance with applicable CERCLA guidance¹ and other technically acceptable protocols, and that the resulting data meet established Data Quality Objectives.

Where applicable, EWW sampling procedures and analysis methods will be consistent with those used in the Lower Duwamish Waterway (LDW) project. Any deviations from procedures used on the LDW must be approved in advance by EPA.

Along with each QAPP, the Respondents shall submit a Health and Safety Plan that is designed to protect on-site personnel and area residents (if any) from physical, chemical, and all other hazards posed by field sampling efforts.

Task 6- Draft and Final Data Reports

The Respondents shall submit both a draft and final Data Report for each field and/or modeling activity conducted in accordance with the SOW. Each data report will include all information regarding the field sampling event, including validated analytical results. Final Data Report(s) will address EPA and other reviewer comments provided on draft documents.

Data Reports shall include, at a minimum, the following information:

- I. Introduction/Purpose,
- II. Summary of the field sampling effort (vessel and equipment used, dates of field effort, recovery information, field observations, sample and station locations)
- III. Deviations from the methods and procedures outlined in the QAPP,
- IV. Health and Safety incidents, if any, that occurred during implementation of the QAPP,
- V. Summary of sample handling and shipment,
- VI. Summary of all data (physical and chemical; field and laboratory measurements, including QC data),
- VII. A data validation report,
- VIII. Copies of field sampling notes,
- IX. Well/Boring/Core descriptions, and
- X. GIS maps of sampling locations.

¹ For example, EPA's Guidance for Conducting Remedial Investigation and Feasibility Studies under CERCLA (EPA/540/G-89-004)

All data (including station locations) should be provided electronically in a Microsoft Office Access compatible format as well as in SEDQUAL format. Information necessary for EPA to perform an independent review of the validated data shall also be provided.

Geospatial analysis of the sediment data should be performed using geospatial and interpolation methods consistent with the LDW project, as appropriate for this site. Details of what chemical(s) should be mapped and interpolation parameters will be decided in consultation with EPA prior to the generation of any maps.

Task 7 — Draft and Final Risk Assessment Technical Memoranda

The Respondent will prepare draft and final Risk Assessment Technical Memoranda that are consistent with the methods and procedures outlined in the Agency's human and ecological risk assessment guidance documents for CERCLA. The Risk Assessment Memoranda will outline the data to be used for each receptor, approach and methods for use in all screening and baseline risk assessments for human and ecological receptors. The format of the memoranda will be determined in consultation with EPA but could be organized by receptor group (i.e. benthic, fish, wildlife and humans). Each memorandum will present the proposed approach for the risk assessment, including the specific methods proposed for the exposure assessment, the effects evaluation and risk characterization. The Risk Assessment Technical Memoranda will include brief descriptions of key regulatory values, toxicity and exposure parameter values proposed for use in both the screening and baseline risk assessments to ensure agreement on approach prior to conducting the risk assessment. Given the standardized nature of the EPA exposure and toxicity values used for human health, these data need only be described and cross referenced to appropriate guidance to ensure compliance. However, for ecological receptors, EPA will require explicit identification of proposed exposure and toxicity values that are to be used in the screening and baseline risk assessments. The memorandum will also identify any outstanding technical issues that have been identified as being controversial and that will require resolution prior to the completion of the risk evaluation.

Task 8- Draft and Final Baseline Ecological Risk Assessment

Using existing as well as additional data (from Tasks 2, 3, 5), the Respondents will prepare and submit a draft and final Ecological Risk Assessment to EPA using the methods and procedures outlined in the Risk Assessment Technical Memorandum (Task 7). The ecological risk assessment should include the following components:

- 1. A conceptual site model,
- 2. Identification of receptors of concern (ROC) (including results from all screening level assessments),
- 3. Identification of chemicals of concern (COC) (including results of all screening),
- 4. An effects and exposure assessment for all ROCs² (includes all site-specific toxicity studies), and

² Potential exposures to subsurface sediment and risk implications associated with these exposures should also be addressed.

5. Risk characterization and uncertainty assessment (including discussion of all lines of evidence outlined in the Risk Assessment Work Plan).

To the extent appropriate given the different physical environments and anticipated differences in some receptors (i.e., saline environment in EWW, brackish in LDW), the approach and assumptions used in the Ecological Risk Assessment for the EWW will be consistent with that of the LDW.

Geospatial analyses of the sediment data will be performed using geospatial and interpolation methods consistent with the LDW RI/FS unless otherwise approved by EPA. Details of what chemical(s) should be mapped and interpolation parameters used will be decided in consultation with EPA prior to the generation of any maps.

Task 9- Draft and Final Baseline Human Health Risk Assessment

The human health risk assessment (HHRA) will be conducted in accordance with the methods and procedures outlined in the Risk Assessment Technical Memorandum (Task 7). The draft and final HHRA will include, but not be limited to, the following components:

- 1. A conceptual site model,
- 2. Identification of indirect and direct exposure routes (including results from any screening level assessments),
- 3. Identification of chemicals of concern (COC) (based on results of screening level risk assessment),
- 4. Toxicity assessment (RfDs, Cancer Slope Factors from EPA's Integrated Risk Information System),
- 5. Quantification of contaminant exposures, and
- 6. Risk characterization and uncertainty assessment.

Based on existing data and additional data collected (Tasks 2, 3, 5), the Respondents will prepare and submit a draft and final HHRA to EPA for review and approval.

The HHRA will evaluate human health risks to adults and children from the EWW OU sediments, surface water, and fish/shellfish tissue. The HHRA will include (at a minimum), with justification, the following scenarios: 1) tribal, 2) recreational and 3) resident and/or worker. The risk assessment will address risk to fish-consuming tribal individuals by applying, as appropriate, the Lower Duwamish Waterway Tribal Risk Framework. The risk assessment will consider risks to Asians, Pacific Islanders and/or others identified from the human use survey of the EWW. To the extent appropriate for their different physical environments and uses, the approach and assumptions used in the HHRA will be consistent with that performed for the LDW.

Geospatial analyses of the sediment data should be performed using geospatial and interpolation methods consistent with the LDW RI/FS. Details of what chemical(s) should be mapped and interpolation parameters will be decided in consultation with EPA prior to the generation of any maps.

Task 10 - Draft and Final Remedial Investigation Report

Respondents will prepare and submit a draft and final RI Report to EPA for review and approval. This report shall summarize results of sediment, surface water and tissue testing from Task 5 into a complete evaluation of the nature and extent of contamination in the EWW OU. The RI report will also include discussions of historical data, chemical fate, sediment transport, historical and on-going sources of contamination and the results of the baseline human and ecological risk assessments. Respondents will refer to EPA RI/FS guidance for an outline of the report format and required contents (EPA 1988).

Task 11 - Remedial Action Objectives Memorandum

Respondents will prepare and submit a Remedial Action Objectives (RAOs) memorandum to EPA for review and approval. The purpose of the RAOs memorandum will be to propose objectives for cleanup at EWW, based on applicable, relevant and appropriate requirements (ARARs) and the results of the final human health and ecological baseline risk assessments. The memorandum will clearly document the rationale used for proposing waterway-wide clean up levels and will build on the preliminary RAOs developed earlier in the project. The memorandum will also propose site boundaries for the waterway-wide cleanup, which will include results from all historical data as well as results from sampling events, sediment transport studies, and human and ecological baseline risk assessments (Tasks 3, 8, and 10). Respondents will identify areas and volumes of contaminated sediments to which general response actions, other than early actions, may apply, taking into account requirements for protectiveness as identified in the RAOs. The chemical and physical characterization of the EWW will also be taken into account.

Task 12 - Draft and Final Remedial Alternatives Screening Memorandum

Conducted concurrently with the baseline ecological and human health risk assessments, the Respondents will develop and evaluate a range of appropriate alternatives (i.e., remedial alternatives as well as disposal alternatives) that ensure protection of human health and the environment. The Respondents will screen and evaluate remedial alternatives in order to establish an appropriate range of remedial alternatives for EWW that will be further evaluated by EPA.

This range of alternatives shall include, but will not be limited to the following:

- 1. No action,
- 2. Natural recovery/enhanced natural recovery,
- 3. In-place confinement (capping),
- 4. Dredging with disposal of dredged material in confined aquatic disposal sites (CADs).
- 5. Dredging with disposal in near shore and/or upland confined disposal facilities (CDFs),
- 6. Dredging with disposal in existing landfills,
- 7. Dredging with beneficial reuse of sediments,

- 8. Treatment of removed materials to reduce the toxicity, mobility, or volume of hazardous substances, and
- 9. Options combining aspects of these and/or other alternatives.

Respondents will discuss the estimated sediment volume addressed by each alternative. This analysis will also include identification and evaluation of potential disposal sites, mitigation sites and treatment technologies in order to eliminate those that cannot be implemented and/or are not feasible at the EWW. If treatability testing is recommended or determined needed by EPA, Respondents will prepare a treatability study work plan for review and approval by EPA.

Respondents will prepare a technical memorandum summarizing the remedial alternatives screening. This memorandum will include an alternatives array summary. The memorandum will be modified by Respondents if required by EPA's comments to assure identification of a complete and appropriate range of viable alternatives to be considered in the detailed analysis. This deliverable will document the methods, rationale, and results of the alternatives screening process.

Task 13 - Draft and Final Feasibility Study

Respondents will prepare a draft FS report for EPA review and comment. This report, as ultimately adopted or amended by EPA, provides a basis for remedy selection by EPA and documents the development and detailed analysis of remedial alternatives. Respondents will refer to the RI/FS Guidance for an outline of the report format and the required report content (EPA 1988).

Within the FS, the Respondents will apply the nine CERCLA evaluation criteria to the assembled Remedial Alternatives from the detailed analysis to ensure that the selected remedial alternative(s) will be:

- 1. Protective of human health and the environment;
- 2. Will be in compliance with, or include a waiver of, ARARs;
- 3. Will be cost-effective;
- 4. Will utilize permanent solutions and alternative treatment technologies, or resource recovery technologies, to the maximum extent practicable;
- 5. Will address the statutory preference for treatment as a principal element.

The evaluation criteria include:

- (1) Overall protection of human health and the environment
- (2) Compliance with ARARs
- (3) Long-term effectiveness and permanence
- (4) Reduction in toxicity, mobility, or volume
- (5) Short-term effectiveness
- (6) Implementability
- (7) Costs
- (8) State acceptance
- (9) Community acceptance.

Criteria 8 and 9 are considered after the RI/FS report will be released to the general public.

For each alternative described in the FS, Respondents shall provide:

- (1) A description of the alternative that outlines the sediment management strategy involved and identifies the key ARARs associated with each alternative; and
- (2) A discussion of the assessment of each alternative against each of the nine criteria. If Respondents do not have direct input on criteria 8 State (or support agency) acceptance or 9 community acceptance, these will be addressed by EPA.

The detailed analysis of alternatives will be conducted by Respondents to provide EPA with the information needed to allow for the selection of remedies for the EWW OU. This analysis is the final task to be performed by Respondents during the FS.

Task 14 - Community Involvement Activities

As requested by EPA, Respondents shall provide information supporting EPA's community involvement programs related to the Work performed pursuant to this SOW, and shall participate in public meetings which may be held or sponsored by EPA to explain activities at or concerning Work performed to this SOW.

Upon request by EPA, Respondents shall submit copies of plans, technical memoranda, raw data, and other reports to EPA except those documents that are privileged.

III. CONTENT OF SUPPORTING PLANS

Quality Assurance Project Plan (QAPPs)

All sampling and analyses performed pursuant to this SOW shall conform to EPA direction, approval, and guidance regarding sampling, quality assurance/quality control (QA/QC), data validation, and chain-of-custody procedures.

Respondents shall develop project-specific Quality Assurance Project Plans (QAPPs) for sample analysis and data handling for any samples collected at the EWW OU. The QAPP shall be based upon the ASAOC, SOW, and EPA guidance. All QAPPs will ensure that sample collection and analytical activities are conducted in accordance with the Puget Sound Estuary Program protocols. The QAPP will address sampling objectives; sampling procedures, a detailed description of sampling activities; sample locations; sampling equipment and procedures; sample custody; analytical procedures; and data reduction, validation and reporting; and personnel qualifications. To the extent appropriate, QAPPs for the EWW also will be consistent with LDW RI/FS sample collection and analytical procedures.

The Data Quality Objectives (DQOs) for the QAPP will, at a minimum, reflect the levels for remedial action objectives identified in the proposed National Contingency Plan, pages 51425-26 and 51433 (December 21, 1988). Field personnel should be available for EPA QA/QC training and orientation, where applicable. The Respondents will demonstrate, in advance, to EPA's satisfaction, that each laboratory it may use is qualified to conduct the proposed work. This includes use of methods and analytical protocols for the chemicals of concern in the media of interest within detection and quantification limits consistent with both QA/QC procedures and DQOs approved in the QAPP for the site by EPA. As noted above, DQOs will consider analytical concentration goals (ACGs) established for the LDW RI/FS and will utilize these ACGs as appropriate.

The QAPP will define in detail the sampling and data-gathering methods that will be used on the project. It will include sampling objectives, a detailed description of sampling activities, sample locations, sample analysis, sampling equipment and procedures, sampling schedule, station positioning, and sample handling (e.g., sample containers and labels, sample preservation).

The QAPP will describe the quality assurance/quality control (QA/QC) protocols necessary to achieve required data quality objectives. The QAPP will be prepared in accordance with "EPA Requirements for Quality Assurance Project Plans (QA/R-5)" (EPA/240/B-01/003, March 2001) and "Guidance on Quality Assurance Project Plans (QA/G-5)" (EPA/600/R-98/018, December 2002).

The laboratory performing the work must have and follow an approved Quality Assurance (QA) program, which complies with ANSI/ASQC E-4 1994, "Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs," (American National Standard, January 5, 1995) and "EPA Requirements for Quality Management Plans (QA/R-2)" (EPA/240/B-01-002, March 2001) or equivalent documentation as determined by EPA. Respondents shall provide to EPA the QA/QC procedures followed by all sampling teams and laboratories performing data collection and/or analysis.

Prior to awarding any work to an analytical laboratory, Respondents will provide assurances that EPA will have access to laboratory personnel, equipment and sample records. Respondents will inform the laboratory that an audit may be performed by EPA or its authorized representative, and that the laboratory agrees to coordinate with EPA prior to performing analyses. Upon request by EPA, Respondents shall allow EPA or its authorized representatives to collect split and/or duplicate samples or have the laboratory analyze samples submitted by EPA for QA monitoring. Respondents shall notify EPA not less than 14 days in advance of any sample collection activity, unless shorter notice is agreed to by EPA. Furthermore, EPA shall have the right to take any additional samples that EPA deems necessary. Upon request, EPA shall allow Respondents to collect split or duplicate samples of any samples EPA takes as part of its oversight of Respondents implementation of the Work.

All analytical data collected under this AOC shall be provided electronically in a Microsoft Access compatible format to EPA.

Health and Safety Plan(s)

The Health and Safety Plan(s) ensure protection of the public health and safety during performance of on-site Work under this Order. This plan shall be prepared in accordance with EPA's Standard Operating Safety Guide (PUB 9285.1-03, PB 92-963414, June 1992). In addition, the plan shall comply with all currently applicable Occupational Safety and Health Administration ("OSHA") regulations found at 29 C.F.R. Part 1910. Respondents shall incorporate all changes to the plan recommended by EPA and shall implement the plan during the duration of the Remedial Action.

